

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/445,289C

DATE: 11/06/2002

TIME: 14:44:48

Input Set : A:\seqlistcorrected3.txt Output Set: N:\CRF4\11062002\1445289C.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:

```
(i) APPLICANT: Mukamolova, Galina V. et al.
      7
            (ii) TITLE OF INVENTION: Bacterial Pheromones and Uses Therefor
      9
           (iii) NUMBER OF SEQUENCES: 59
     11
            (iv) CORRESPONDENCE ADDRESS:
     12
                  (A) ADDRESSEE: LAHIVE & COCKFIELD, LLP
     13
                  (B) STREET: 28 State Street
     14
                  (C) CITY: Boston
     15
                 (D) STATE: Massachusetts
                                                                       RECEIVED
                  (E) COUNTRY: USA
     16
     17
                  (F) ZIP: 02109-1875
                                                                          NOV 1 8 2002
     19
             (v) COMPUTER READABLE FORM:
     20
                  (A) MEDIUM TYPE: Floppy disk
                                                                     TECH CENTER 1600/2900
     21
                  (B) COMPUTER: IBM PC compatible
     22
                  (C) OPERATING SYSTEM: PC-DOS/MS-DOS
     23
                  (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
            (vi) CURRENT APPLICATION DATA:
     25
C--> 26
                  (A) APPLICATION NUMBER: US/09/445,289C
C--> 27
                  (B) FILING DATE: 11-May-2000
C--> 37
           (vii) PRIOR APPLICATION DATA:
     30
                  (A) APPLICATION NUMBER: PCT/GB98/01619
     31
                  (B) FILING DATE: 03-JUNE-1998
                  (A) APPLICATION NUMBER: GB 9711389.8
     34
     35
                  (B) FILING DATE: 04-JUN-1997
     38
                  (A) APPLICATION NUMBER: GB 9811221.2
     39
                  (B) FILING DATE: 27-MAY-1998
     41
          (viii) ATTORNEY/AGENT INFORMATION:
     42
                  (A) NAME: Lauro, Peter C.
    43
                  (B) REGISTRATION NUMBER: 32,360
                  (C) REFERENCE/DOCKET NUMBER: FHW-051US
     44
     46
            (ix) TELECOMMUNICATION INFORMATION:
    47
                  (A) TELEPHONE: (617) 227-7400
                  (B) TELEFAX: (617) 742-4214
    48
     50
        (2) INFORMATION FOR SEQ ID NO: 1:
     52
             (i) SEQUENCE CHARACTERISTICS:
     53
                  (A) LENGTH: 362 amino acids
     54
                  (B) TYPE: amino acid
     55
                  (D) TOPOLOGY: linear
     59
            (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
    61
             Met Leu Arg Leu Val Val Gly Ala Leu Leu Leu Val Leu Ala Phe Ala
    62
                             5
                                                  10
    64
             Gly Gly Tyr Ala Val Ala Ala Cys Lys Thr Val Thr Leu Thr Val Asp
```

Input Set : A:\seqlistcorrected3.txt
Output Set: N:\CRF4\11062002\I445289C.raw

65					20					25					30		
67		Gly	Thr	Ala	Met	Arg	Val	Thr	Thr	Met	Lys	Ser	Arg	Val	Ile	Asp	Ile
68		_		35		_			40		-		_	45		_	
70		Val	Glu	Glu	Asn	Gly	Phe	Ser	Val	Asp	Asp	Arg	Asp	Asp	Leu	Tyr	Pro
71			50			_		55		_		_	60	_		_	
73		Ala	Ala	Gly	Val	Gln	Val	His	Asp	Ala	Asp	Thr	Ile	Val	Leu	Arg	Arg
74		65		_			70		_		-	75				_	80
76		Ser	Arg	Pro	Leu	Gln	Ile	Ser	Leu	Asp	Gly	His	Asp	Ala	Lys	Gln	Val
77			_			85				_	90		-		_	95	
79		Trp	Thr	Thr	Ala	Ser	Thr	Val	Asp	Glu	Ala	Leu	Ala	Gln	Leu	Ala	Met
80					100					105					110		
82		Thr	Asp	Thr	Ala	Pro	Ala	Ala	Ala	Ser	Arg	Ala	Ser	Arg	Val	Pro	Leu
83				115					120					125			
85		Ser	Gly	Met	Ala	Leu	Pro	Val	Val	Ser	Ala	Lys	Thr	Val	Gln	Leu	Asn
86			130					135				-	140				
88		Asp	Gly	Gly	Leu	Val	Arg	Thr	Val	His	Leu	Pro	Ala	Pro	Asn	۷al	Ala
89		145					150					155					160
91 ·		Gly	Leu	Leu	Ser	Ala	Ala	Gly	Val	Pro	Leu	Leu	Gln	Ser	Asp	His	Val
92						165					170					175	
94		Val	Pro	Ala	Ala	Thr	Ala	Pro	Ile	Val	Glu	Gly	Met	Gln	Ile	Gln	Val
95					180					185					190		
97		Thr	Arg	Asn	Arg	Ile	Lys	Lys	Val	Thr	Glu	Arg	Leu	Pro	Leu	Pro	Pro
98				195					200					205			
100		Asr	n Ala	a Arg	Arg	y Val	l Glu	ı Asp	Pro	Glu	ı Met	Asr	Met	: Ser	Arg	g Glu	ı Val
101			210)				215	5				220)			
103		Val	Glu	ı Asp	Pro	Gl	y Val	Pro	Gly	Thi	Glr	Asp	Va]	LThr	Phe	e Ala	a Val
104		225	5				230)				235	5				240
106		Ala	ı Glu	ı Val	. Asr	Gly	y Val	Glu	ı Thi	Gly	Arg	Leu	ı Pro	o Val	. Ala	a Ası	n Val
107						245	5				250)				25	5
109		Val	. Val	. Thr	Pro	Ala	a His	Glu	ı Ala	val	L Val	Arg	y Val	L Gly	Thi	r Lys	s Pro
110					260					265					270		
112		Gly	Thi	Glu	ı Val	. Pro	Pro	val	. Ile	as As	Gly	Ser	: Ile	Trp	Asp	Ala	a Ile
113				275	5				280)				285	5		
115		Ala	ı Gly	y Cys	Glu	ı Ala	a Gly	g Gly	Asr	Tr) Ala	Ile	Asr	Thr	Gly	y Ası	ı Gly
116			290					295					300				
118				Gly	Gl Y	v Val			Asp	Glr	ı Gly	Thr	Tr	Glu	ı Ala	a Ası	ı Gly
119		305					310					315					320
121		Gly	Leu	ı Arg	ГТУ			Arg	, Ala	ı Asp			1 Thi	: Arg	, Glu		ı Gln
122						325					330					335	
124		Ile	Ala	ı Val			ı Val	Thr	Arg			Glr	ı Gl	Trp			a Trp
125			_		340					345					350)	
127		Pro	val	_		Ala	a Arg	j Ala	_		a Arg	ſ					
128				355					360)							
	(2)			NOI													
132		(i)		DUENC						_							
133			•) LE					acid	is							
134			-	3) TY													
135) TC													
139		(Xi)	SEÇ	QUENC	E DE	SCR	LPTIC	on: S	EQ]	D NO): 2:						

Input Set : A:\seqlistcorrected3.txt
Output Set: N:\CRF4\11062002\1445289C.raw

141		Mat	Dro	บรา	Clu	шхх	Tau	mrn.	724	הוג	A ra	Πh∽	ת 1 ת	Tvc	C1 17	Пhr	Thr
141		1	PIO	Val	GIY	5	пеп	пр	Arg	нта	10	1111	AIA	гуз	GLY	15	1111
144			T.ve	Asn	Δla	_	Thr	Thr	T.e.u	Tle		Δla	Δla	Tle	Δla		Thr
145		шец	цу	A511	20	9	1111	1111	шси	25	nia	nra	nia	, 110	30	OLI	
147		Len	Va1	Thr		Ser	Pro	λla	Glv		Ala	Asn	Ala	Asp	-	λla	Glv
148		204		35		001			40		****			45			
150		Leu	Asp	Pro	Asn	Ala	Ala	Ala		Pro	Asp	Ala	Val		Phe	Asp	Pro
151			50					55	017				60	0-1			
153		Asn		Pro	Pro	Ala	Pro		Ala	Ala	Pro	Val		Thr	Pro	Pro	Ala
154		65					70	<u>F</u>				75	E		:		80
156		Pro	Glu	Asp	Ala	Gly	Phe	Asp	Pro	Asn	Leu	Pro	Pro	Pro	Leu	Ala	Pro
157				•		85		-			90					95	
159		Asp	Phe	Leu	Ser	Pro	Pro	Ala	Glu	Glu	Ala	Pro	Pro	Val	Pro	Val	Ala
160		-			100					105					110		
162		Tyr	Ser	Val	Asn	Trp	Asp	Ala	Ile	Ala	Gln	Cys	Glu	Ser	Gly	Gly	Asn
163		_		115		_	_		120			_		125			
165		Trp	Ser	Ile	Asn	Thr	Gly	Asn	Gly	Tyr	Tyr	Gly	Gly	Leu	Arg	Phe	Thr
166		•	130					135					140				
168		Ala	Gly	Thr	Trp	Arg	Ala	Asn	Gly	Gly	Ser	Gly	Ser	Ala	Ala	Asn	Ala
169		145					150					155					160
171		Ser	Arg	Glu	Glu	Gln	Ile	Arg	Val	Ala	Glu	Asn	Val	Leu	Arg	Ser	Gln
172						165					170					175	
174		Gly	Ile	Arg	Ala	Trp	Pro	Val	Cys	Gly	Arg	Arg	Gly				
175					180					185							
177	121	T.170															
1//	(2)					_		D: 3									
179	(2)		SEQ	JENCI	E CHA	ARAC	reri:	STIC	S:								
179 180	(2)		SEQUAL (A)	JENCI) LEI	CHA	ARACI : 174	reris 1 am:	STICS ino a	S:	3							
179 180 181	(2)		SEQUAL (A)	JENCI) LEI) TYI	E CHA NGTH: PE: a	ARACI : 174	reris lam: cac:	STICS ino a id	S:	5							
179 180 181 182	(2)	(i)	SEQUAL (A)	JENCI) LEI) TYI) TOI	E CHA NGTH: PE: 6	ARACI : 174 amino	TERIS Lam:	STICS ino a id ar	S: acids								
179 180 181 182 186	(2)	(i) (xi)	SEQUAL (A)	JENCI) LEI) TYI) TOI JENCI	E CHA NGTH: PE: a POLOG E DES	ARACT 174 amino GY: 1	TERIS am: cac: lines	STICS ino a id ar N: SI	S: acids EQ II	ON C							
179 180 181 182 186 188	(2)	(i) (xi) Met	SEQUAL (A)	JENCI) LEI) TYI) TOI	E CHA NGTH: PE: a POLOG E DES	ARACT 174 amino GY: 1 SCRIE Tyr	TERIS am: cac: lines	STICS ino a id ar N: SI	S: acids EQ II	ON C	Thr	Ser	Ser	Ile	Ile		Ala
179 180 181 182 186 188	(2)	(i) (xi) Met 1	SEQUENT (A) (B) (D) SEQUENT (B)	JENCI) LEI) TYI) TOI JENCI Glu	E CHANGTH: PE: 6 POLOGE DES	ARACT 174 amino GY: 1 SCRIF Tyr 5	TERIS am: ac: linea TIOI Arg	STICS ino a id ar N: SI Lys	S: acids EQ II Leu	NO Thr	Thr 10					15	
179 180 181 182 186 188 189	(2)	(i) (xi) Met 1	SEQUENT (A) (B) (D) SEQUENT (B)	JENCI) LEI) TYI) TOI JENCI	E CHANGTH: PE: a POLOGE DES Ser Phe	ARACT 174 amino GY: 1 SCRIF Tyr 5	TERIS am: ac: linea TIOI Arg	STICS ino a id ar N: SI Lys	S: acids EQ II Leu	NO Thr Leu	Thr 10				Ala	15	
179 180 181 182 186 188 189 191	(2)	(i) (xi) Met 1 Lys	SEQUE (A) (B) (D) SEQUE SET	JENCH) LEN) TYN) TON JENCH Glu	E CHANGTH: PE: 6 POLOGE DES Ser Phe 20	ARACTAMING SY: 174 SCRIN Tyr 5 Thr	TERIS I am: D ac: Linea PTION Arg	STICS ino a id ar N: SI Lys	S: acids EQ II Leu Met	NO Thr Leu 25	Thr 10 Asp	Gly	Ser	Ile	Ala 30	15 Leu	Ala
179 180 181 182 186 188 189 191 192 194	(2)	(i) (xi) Met 1 Lys	SEQUE (A) (B) (D) SEQUE SET	JENCH) LEN) TYN) TON JENCH Glu Thr	E CHANGTH: PE: 8 POLOGE DES Ser Phe 20	ARACTAMING SY: 174 SCRIN Tyr 5 Thr	TERIS I am: D ac: Linea PTION Arg	STICS ino a id ar N: SI Lys	S: acids EQ II Leu Met Asp	NO Thr Leu 25	Thr 10 Asp	Gly	Ser Asp	Ile Gln	Ala 30	15 Leu	Ala
179 180 181 182 186 188 189 191 192 194 195	(2)	(i) (xi) Met 1 Lys Gly	SEQUENCE (A) (B) (D) SEQUENCE (B) SET ILE	JENCH) LEI) TYI) TOI JENCH Glu Thr Ala 35	E CHANGTH: PE: 6 POLOGE DES Ser Phe 20 Ser	ARACT 174 amino GY: 1 SCRIF Tyr 5 Thr	TERIS I am: O ac: Linea PTION Arg Gly Ala	STICS ino a id ar N: SI Lys Ala	S: acids EQ II Leu Met Asp 40	NO Thr Leu 25 Ser	Thr 10 Asp Glu	Gly Trp	Ser Asp	Ile Gln 45	Ala 30 Val	15 Leu Ala	Ala Arg
179 180 181 182 186 188 189 191 192 194 195 197	(2)	(i) (xi) Met 1 Lys Gly	SEQUENCE (A) (B) (D) SEQUENCE (B) SET ILE	JENCH) LEN) TYN) TON JENCH Glu Thr	E CHANGTH: PE: 6 POLOGE DES Ser Phe 20 Ser	ARACT 174 amino GY: 1 SCRIF Tyr 5 Thr	TERIS I am: O ac: Linea PTION Arg Gly Ala	STICS ino a id ar N: SI Lys Ala Thr	S: acids EQ II Leu Met Asp 40	NO Thr Leu 25 Ser	Thr 10 Asp Glu	Gly Trp	Ser Asp Gly	Ile Gln 45	Ala 30 Val	15 Leu Ala	Ala Arg
179 180 181 182 186 188 189 191 192 194 195 197	(2)	(i) (xi) Met 1 Lys Gly Cys	SEQUENCE (A) (B) (D) SEQUENCE (B) SET Ile Gln Glu 50	JENCE) LET) TYI) TOI JENCE Glu Thr Ala 35 Ser	E CHANGTH: PE: 6 POLOGE DES Ser Phe 20 Ser Gly	ARACT 174 amino GY: 1 SCRIB Tyr 5 Thr Pro	TERIS A am: O ac: Linea PTION Arg Gly Ala Asn	STICS ino a id ar N: SI Lys Ala Thr Trp 55	EQ II Leu Met Asp 40 Ser	NO Thr Leu 25 Ser	Thr 10 Asp Glu Asn	Gly Trp Thr	Ser Asp Gly 60	Ile Gln 45 Asn	Ala 30 Val Gly	15 Leu Ala Tyr	Ala Arg Leu
179 180 181 182 186 188 189 191 192 194 195 197 198 200		(i) (xi) Met 1 Lys Gly Cys Gly	SEQUENCE (A) (B) (D) SEQUENCE (B) SET Ile Gln Glu 50	JENCH) LEI) TYI) TOI JENCH Glu Thr Ala 35	E CHANGTH: PE: 6 POLOGE DES Ser Phe 20 Ser Gly	ARACT 174 amino GY: 1 SCRIB Tyr 5 Thr Pro	TERIS I ami O ac: Linea PTION Arg Gly Ala Asn Ser	STICS ino a id ar N: SI Lys Ala Thr Trp 55	EQ II Leu Met Asp 40 Ser	NO Thr Leu 25 Ser	Thr 10 Asp Glu Asn	Gly Trp Thr	Ser Asp Gly 60	Ile Gln 45 Asn	Ala 30 Val Gly	15 Leu Ala Tyr	Ala Arg Leu Gly
179 180 181 182 186 188 189 191 192 194 195 197 198 200 201		(i) (xi) Met 1 Lys Gly Cys Gly 65	SEQUENCE (A) (B) (D) SEQUENCE (B) SET ILE Gln Glu 50 Gly	JENCE) LEE) TYI) TOI JENCE Glu Thr Ala 35 Ser Leu	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln	ARACT: 174 amino GY: 1 SCRIF Tyr 5 Thr Pro Gly Phe	PERIS lamino ac: linea PTION Arg Gly Ala Asn Ser 70	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln	EQ III Leu Met Asp 40 Ser Gly	D NO Thr Leu 25 Ser Ile Thr	Thr 10 Asp Glu Asn Trp	Gly Trp Thr Ala 75	Ser Asp Gly 60 Ser	Ile Gln 45 Asn His	Ala 30 Val Gly	15 Leu Ala Tyr Gly	Ala Arg Leu Gly
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203		(i) (xi) Met 1 Lys Gly Cys Gly 65	SEQUENCE (A) (B) (D) SEQUENCE (B) SET ILE Gln Glu 50 Gly	JENCE) LET) TYI) TOI JENCE Glu Thr Ala 35 Ser	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln	ARACT: 174 amino GY: 1 SCRIF Tyr 5 Thr Pro Gly Phe Ser	PERIS lamino ac: linea PTION Arg Gly Ala Asn Ser 70	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln	EQ III Leu Met Asp 40 Ser Gly	D NO Thr Leu 25 Ser Ile Thr	Thr 10 Asp Glu Asn Trp	Gly Trp Thr Ala 75	Ser Asp Gly 60 Ser	Ile Gln 45 Asn His	Ala 30 Val Gly	15 Leu Ala Tyr Gly Ile	Ala Arg Leu Gly
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu	SEQUENCE (A) (B) (D) SEQUENCE (B) SET ILE Gln Glu 50 Gly Tyr	JENCH JENCH JENCH Glu Thr Ala 35 Ser Leu	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro	ARACT: 174 amino GY: 1 SCRIF Tyr 5 Thr Pro Gly Phe Ser 85	PERIS lam: o ac: linea PTIOI Arg Gly Ala Asn Ser 70 Ala	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln	EQ II Leu Met Asp 40 Ser Gly Leu	D NO Thr Leu 25 Ser Ile Thr	Thr 10 Asp Glu Asn Trp Thr 90	Gly Trp Thr Ala 75 Arg	Ser Asp Gly 60 Ser Glu	Ile Gln 45 Asn His	Ala 30 Val Gly Gly	15 Leu Ala Tyr Gly Ile 95	Ala Arg Leu Gly 80
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204 206		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu	SEQUENCE (A) (B) (D) SEQUENCE (B) SET ILE Gln Glu 50 Gly Tyr	JENCE) LEE) TYI) TOI JENCE Glu Thr Ala 35 Ser Leu	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro Arg	ARACT: 174 amino GY: 1 SCRIF Tyr 5 Thr Pro Gly Phe Ser 85	PERIS lam: o ac: linea PTIOI Arg Gly Ala Asn Ser 70 Ala	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln	EQ II Leu Met Asp 40 Ser Gly Leu	D NO Thr Leu 25 Ser Ile Thr Ala	Thr 10 Asp Glu Asn Trp Thr 90	Gly Trp Thr Ala 75 Arg	Ser Asp Gly 60 Ser Glu	Ile Gln 45 Asn His	Ala 30 Val Gly Gly Gln Trp	15 Leu Ala Tyr Gly Ile 95	Ala Arg Leu Gly 80
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204 206 207		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu Val	SEQUENCE (A) (B) (D) SEQUENCE (B) (B) SEQUENCE (B) (B) SEQUENCE (B) SE	JENCH JENCH TYPI TOPI JENCH Glu Thr Ala 35 Ser Leu Ala Glu	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro Arg 100	ARACT: 174 amino GY: 1 SCRIF Tyr 5 Thr Pro Gly Phe Ser 85 Val	PERIS A am: O ac: Linea PTION Arg Gly Ala Asn Ser 70 Ala Leu	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln Ala	E: acids EQ II Leu Met Asp 40 Ser Gly Leu Thr	D NO Thr Leu 25 Ser Ile Thr Ala Gln 105	Thr 10 Asp Glu Asn Trp Thr 90 Gly	Gly Trp Thr Ala 75 Arg	Ser Asp Gly 60 Ser Glu Gly	Ile Gln 45 Asn His Gln Ala	Ala 30 Val Gly Gly Gln Trp 110	15 Leu Ala Tyr Gly Ile 95 Pro	Ala Arg Leu Gly 80 Ala
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204 206 207 209		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu Val	SEQUENCE (A) (B) (D) SEQUENCE (B) (B) SEQUENCE (B) (B) SEQUENCE (B) SE	JENCH JENCH TYII TOI JENCH Glu Thr Ala 35 Ser Leu Ala Glu	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro Arg 100	ARACT: 174 amino GY: 1 SCRIF Tyr 5 Thr Pro Gly Phe Ser 85 Val	PERIS A am: O ac: Linea PTION Arg Gly Ala Asn Ser 70 Ala Leu	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln Ala	EQ II Leu Met Asp 40 Ser Gly Leu Thr	D NO Thr Leu 25 Ser Ile Thr Ala Gln 105	Thr 10 Asp Glu Asn Trp Thr 90 Gly	Gly Trp Thr Ala 75 Arg	Ser Asp Gly 60 Ser Glu Gly	Ile Gln 45 Asn His Gln Ala Val	Ala 30 Val Gly Gly Gln Trp 110	15 Leu Ala Tyr Gly Ile 95 Pro	Ala Arg Leu Gly 80 Ala
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204 206 207 209 210		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu Val Cys	SEQUENCE (A) (B) (D) SEQUENCE (B) SEQUENCE (JENCH JENCH JENCH Glu Thr Ala 35 Ser Leu Ala Glu His 115	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro Arg 100 Gly	ARACT 174 amino GY: 1 SCRIN Tyr 5 Thr Pro Gly Phe Ser 85 Val Leu	TERIS A am: O ac: Linea PTION Arg Gly Ala Asn Ser 70 Ala Leu Ser	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln Ala Gly	EQ II Leu Met Asp 40 Ser Gly Leu Thr	D NO Thr Leu 25 Ser Ile Thr Ala Gln 105 Ser	Thr 10 Asp Glu Asn Trp Thr 90 Gly Leu	Gly Trp Thr Ala 75 Arg Ser Gln	Ser Asp Gly 60 Ser Glu Gly Gly	Ile Gln 45 Asn His Gln Ala Val 125	Ala 30 Val Gly Gly Gln Trp 110 Leu	15 Leu Ala Tyr Gly Ile 95 Pro	Ala Arg Leu Gly 80 Ala Ala Ala
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204 206 207 209 210 212		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu Val Cys	SEQUENCE (A) (B) (D) SEQUENCE (B) SEQUENCE (JENCH JENCH TYII TOI JENCH Glu Thr Ala 35 Ser Leu Ala Glu	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro Arg 100 Gly	ARACT 174 amino GY: 1 SCRIN Tyr 5 Thr Pro Gly Phe Ser 85 Val Leu	TERIS A am: O ac: Linea PTION Arg Gly Ala Asn Ser 70 Ala Leu Ser	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln Ala Gly Ile	EQ II Leu Met Asp 40 Ser Gly Leu Thr	D NO Thr Leu 25 Ser Ile Thr Ala Gln 105 Ser	Thr 10 Asp Glu Asn Trp Thr 90 Gly Leu	Gly Trp Thr Ala 75 Arg Ser Gln	Ser Asp Gly 60 Ser Glu Gly Glu Ala	Ile Gln 45 Asn His Gln Ala Val 125	Ala 30 Val Gly Gly Gln Trp 110 Leu	15 Leu Ala Tyr Gly Ile 95 Pro	Ala Arg Leu Gly 80 Ala Ala Ala
179 180 181 182 186 189 191 192 194 195 197 198 200 201 203 204 206 207 209 210		(i) (xi) Met 1 Lys Gly Cys Gly 65 Glu Val Cys Gly	SEQUENCE (A) (B) (D) SEQUENCE (B) SEQUENCE (JENCH JENCH JENCH Glu Thr Ala 35 Ser Leu Ala Glu His 115	E CHANGTH: PE: a POLOGE DES Ser Phe 20 Ser Gly Gln Pro Arg 100 Gly Ala	ARACT 174 amino GY: 1 SCRII Tyr 5 Thr Pro Gly Phe Ser 85 Val Leu Pro	PERISON ACTION AT A SAN AS A Leu Ser Trp	STICS ino a id ar N: SI Lys Ala Thr Trp 55 Gln Gln Ala Gly Ile 135	EQ II Leu Met Asp 40 Ser Gly Leu Thr Pro 120 Asn	D NO Thr Leu 25 Ser Ile Thr Ala Gln 105 Ser Gly	Thr 10 Asp Glu Asn Trp Thr 90 Gly Leu Ala	Gly Trp Thr Ala 75 Arg Ser Gln Pro	Ser Asp Gly 60 Ser Glu Gly Glu Ala 140	Ile Gln 45 Asn His Gln Ala Val 125 Pro	Ala 30 Val Gly Gly Gln Trp 110 Leu Leu	15 Leu Ala Tyr Gly Ile 95 Pro Pro	Ala Arg Leu Gly 80 Ala Ala Ala Pro

Input Set : A:\seqlistcorrected3.txt
Output Set: N:\CRF4\11062002\1445289C.raw

216		145					150					155					160
218			Pro	Thr	Pro	Gly		Val	Pro	Ser	Pro		Ala	Arg	Pro		
219						165					170			_			
221	(2)	INFO	RMAT:	ION I	FOR S	SEQ :	ID N	0: 4	:								
223		(i)	SEQ	JENCI	E CHA	ARAC'	reri:	STIC	s:								
224			(A) LENGTH: 407 amino acids														
225			(B	TYI)	PE: a	amin	o ac	id									
226			(D) TOPOLOGY: linear SEQUENCE DESCRIPTION: SEQ ID NO: 4:														
230																	
232			Ser	Gly	Arg		Arg	Lys	Pro	Thr		Ser	Asn	Val	Ser		Ala
233		1				5				_	10					15	
235		гĀг	TTe	Ala		Thr	GIY	Ala	Val		GIY	GLY	GIY	Gly		Ala	Met
236		21-		63	20	m1		. 1 -	m1	25	01	a 1	m		30	*** 1	
238		Ата	Ата		Ата	Thr	Ата	Ата		Asp	GIY	GIU	Trp	Asp	GIN	vai	АТА
239		7 ~~	C	35	Com	C1	C1	7 ~ ~	40	Com	T1.	3 0 0	mh w	45	7 0 0	C1	M
241 242		AIG	50	GIU	ser	GTA	GTÅ	55	ттр	ser	Tre	ASII	60	Gly	ASII	GTÅ	тут
244		Tau		Clv	Lau	Gln	Dhe		Gln	Sar	Thr	Птп		Ala	Hi'c	Cly	Clv
245		65	Gry	GIY	пец	GIII	70	1111	GIII	261	1111	75	Ala	Ата	1115	GIY	80
247			Glu	Phe	Ala	Pro		Ala	Gln	Leu	Ala		Ara	Glu	Gln	Gln	
248		011	0		•	85	JU <u>-</u>				90		5	0	· · · ·	95	
250		Ala	Val	Glv	Glu		Val	Leu	Ala	Thr		Gly	Ara	Gly	Ala		Pro
251				-	100					105		•			110	-	
253		Val	Cys	Gly	Arg	Gly	Leu	Ser	Asn	Ala	Thr	Pro	Arg	Glu	Val	Leu	Pro
254			_	115		_			120				-	125			
256		Ala	Ser	Ala	Ala	Met	Asp	Ala	Pro	Leu	Asp	Ala	Ala	Ala	Val	Asn	Gly
257			130					135					140				
259		Glu	Pro	Ala	${\tt Pro}$	Leu	Ala	Pro	Pro	Pro	Ala	Asp	Pro	Ala	Pro	Pro	Val
260		145					150					155					160
262		Glu	Leu	Ala	Ala	Asn	Asp	Leu	Pro	Ala	Pro	Leu	Gly	Glu	Pro	Leu	Pro
263						165				_	170		_		_	175	
265		Ala	Ala	Pro		Asp	Pro	Ala	Pro		Ala	Asp	Leu	Ala		Pro	Ala
266			- 1		180					185			1		190	-	
268		Pro	Ата	_	vaı	Ата	Pro	Pro		GIU	Leu	Ala	vai	Asn	Asp	Leu	Pro
269 271		ח ה	Dro	195	C111	Clu	Dro	T 011	200	ח ז ה	ר ו ג	Bro	אוֹ א	205	Dro	ת 1 ת	Dro
272		Ala	210	пеп	GIY	GIU	FIO	215	PIO	мта	нта	PIO	220	Asp	PIO	AIA	PIO
274		Pro		Acn	T.e.11	Δla	Pro		Δla	Pro	Δla	Aen		Ala	Pro	Pro	Δla
275	•	225	niu	nop	шси	niu	230	110	MIG.	110	nia	235	шец	nia	110	110	240
277			Ala	Asp	Leu	Ala		Pro	Ala	Pro	Ala		Leu	Ala	Pro	Pro	
278						245					250	F				255	
280		Glu	Leu	Ala	Val		Asp	Leu	Pro	Ala	Pro	Leu	Gly	Glu	Pro		Pro
281					260		-			265			-		270		
283		Ala	Ala	Pro	Ala	Glu	Leu	Ala	Pro	Pro	Ala	Asp	Leu	Ala	Pro	Ala	Ser
284				275					280					285			
286		Ala	Asp	Leu	Ala	Pro	Pro	Ala	Pro	Ala	Asp	Leu	Ala	Pro	Pro	Ala	Pro
287			290					295					300				
289			Glu	Leu	Ala	Pro		Ala	Pro	Ala	Asp		Ala	Pro	Pro	Ala	
290		305					310					315					320

Input Set : A:\seqlistcorrected3.txt
Output Set: N:\CRF4\11062002\1445289C.raw

```
Val Asn Glu Gln Thr Ala Pro Gly Asp Gln Pro Ala Thr Ala Pro Gly
292
293
                         325
                                              330
295
         Gly Pro Val Gly Leu Ala Thr Asp Leu Glu Leu Pro Glu Pro Asp Pro
296
                                          345
298
         Gln Pro Ala Asp Ala Pro Pro Pro Gly Asp Val Thr Glu Ala Pro Ala
299
                                      360
301
         Glu Thr Pro Gln Val Ser Asn Ile Ala Tyr Thr Lys Lys Leu Trp Gln
302
                                 375
                                                      380
304
         Ala Ile Arg Ala Gln Asp Val Cys Gly Asn Asp Ala Leu Asp Ser Leu
305
                              390
307
         Ala Gln Pro Tyr Val Ile Gly
308
                         405
310 (2) INFORMATION FOR SEQ ID NO: 5:
312
         (i) SEQUENCE CHARACTERISTICS:
313
              (A) LENGTH: 155 amino acids
314
              (B) TYPE: amino acid
315
              (D) TOPOLOGY: linear
        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
319
         Met Pro Gly Glu Met Leu Asp Val Arg Lys Leu Cys Lys Leu Phe Val
321
322
324
         Lys Ser Ala Val Val Ser Gly Ile Val Thr Ala Ser Met Ala Leu Ser
325
                     20
                                          25
327
         Thr Ser Thr Gly Met Ala Asn Ala Val Pro Arg Glu Pro Asn Trp Asp
328
                                      40
330
         Ala Val Ala Gln Cys Glu Ser Gly Arg Asn Trp Arg Ala Asn Thr Gly
331
333
         Asn Gly Phe Tyr Gly Gly Leu Gln Phe Lys Pro Thr Ile Trp Ala Arg
334
                             70
                                                  75
336
         Tyr Gly Gly Val Gly Asn Pro Ala Gly Ala Ser Arg Glu Gln Gln Ile
337
                                              90
339
         Thr Val Ala Asn Arg Val Leu Ala Asp Gln Gly Leu Asp Ala Trp Pro
340
                                          105
                     100
342
         Lys Cys Gly Ala Ala Ser Asp Leu Pro Ile Thr Leu Trp Ser His Pro
343
                 115
                                      120
345
         Ala Gln Gly Val Lys Gln Ile Ile Asn Asp Ile Ile Gln Met Gly Asp
346
                                 135
         Thr Thr Leu Ala Ala Ile Ala Leu Asn Gly Leu
348
349
                             150
351 (2) INFORMATION FOR SEQ ID NO: 6:
353
         (i) SEQUENCE CHARACTERISTICS:
354
              (A) LENGTH: 176 amino acids
355
              (B) TYPE: amino acid
356
              (D) TOPOLOGY: linear
360
        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
362
        Met His Pro Leu Pro Ala Asp His Gly Arg Ser Arg Cys Asn Arg His
363
                                              10
         Pro Ile Ser Pro Leu Ser Leu Ile Gly Asn Ile Ser Ala Thr Ser Gly
365
366
                     20
                                          25
368
         Asp Met Ser Ser Met Thr Arg Ile Ala Lys Pro Leu Ile Lys Ser Ala
```

RAW SEQUENCE LISTING ERROR SUMMARY PATENT APPLICATION: US/09/445,289C

DATE: 11/06/2002 TIME: 14:44:49

Input Set : A:\seqlistcorrected3.txt

Output Set: N:\CRF4\11062002\I445289C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the $\langle 220 \rangle$ to $\langle 223 \rangle$ fields of each sequence which presents at least one n or Xaa.

Seq#:11; Xaa Pos.3,4
Seq#:38; Xaa Pos.13,18
Seq#:41; N Pos. 9,15,21

VERIFICATION SUMMARY

DATE: 11/06/2002 TIME: 14:44:49

PATENT APPLICATION: US/09/445,289C

Input Set : A:\seqlistcorrected3.txt Output Set: N:\CRF4\11062002\I445289C.raw

L:26 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:27 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]

L:29 M:220 C: Keyword misspelled or invalid format, [(vii) PRIOR APPLICATION DATA:]

L:641 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0 L:1387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0 L:1390 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:16

L:1716 M:111 C: (47) String data converted to upper case,

M:111 Repeated in SeqNo=54